

**Amendments to the Abstract:**

Please amend the abstract as follows:

A method and system are provided for measuring impedance and voltage characteristics of individual ~~cells~~ cells of multi-cell electrochemical devices, for example a battery or a fuel cell stack. The electrochemical system comprises a plurality of cells; a measuring device including a plurality of inputs connected across the plurality of cells to generate voltage and current signals indicative of voltage and current characteristics of the plurality of cells; a current supply/draw means for superimposing modulated current values through the plurality of cells; and a controller for controlling at least one system operating condition based on the voltage and current characteristics received from the measuring device, the controller being connected to the measuring device. The method comprises (a) superimposing modulated current values across a plurality of cells of the electrochemical device; (b) drawing current from the plurality of cells to generate voltage and current signals indicative of voltage and current characteristics of the plurality of cells; and, (c) controlling the at least one system operating condition based on the voltage and current characteristics of the plurality of cells, wherein the at least one system operating condition comprises at least one of temperature, humidity and reactant flow rates, within the electrochemical system.